



RESEARCH ARTICLE

FREQUENCY OF SEXUAL DYSFUNCTION IN INFERTILE WOMEN AND ITS RELATION TO DEPRESSION AND ANXIETY

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ABSTRACT

Introduction: Infertility leads to a variety of psychological problems. This study examines the prevalence of sexual dysfunction in infertile women and its relation with depression and anxiety in patients referred to the infertility clinic of Vali-e Asr Hospital.

Method: In this study, 60 women suffering from primary and secondary infertility referring to the infertility clinic of Vali-e Asr Hospital from February 2014 to February 2015 were studied. Data were collected in forms and Persian language versions of the Female Sexual Function Index (FSFI) and the Depression Anxiety Stress Scales (DASS-21) were gathered.

Results: The average age of the patients in the study was 29.69 ± 5.47 and the average age of their spouses was 33.24 ± 6.34 (24-65 years of age). Average duration of infertility in these patients was 4.44 ± 3.10 . In the present study, 52% of the patients were diagnosed with sexual dysfunction, 52% with anxiety, 46% with varying degrees of stress, and 42% with varying degrees of depression. Depression and stress had the strongest correlation with satisfaction, and anxiety had the strongest correlation with orgasm. Furthermore, anxiety had the strongest correlation with sexual function in patients under study. Only the correlation between stress and satisfaction was statistically significant.

Conclusion: According to the results, anxiety occurs more frequently in infertile women, and it can co-occur with female orgasmic dysfunction. Despite the negative effects of mental disorders on sexual function, in this study only the inverse relationship between stress and satisfaction was statistically significant. More comprehensive studies with greater sample sizes can lead to clarification of the relationships between the study variables.

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INTRODUCTION

Infertility, defined as failure to achieve clinical pregnancy after at least one year of regular unprotected sexual intercourse, has been described as one of the most bitter occurrences in one's life, comparable with the death of a first-degree relative. Demographic studies approximate the frequency of infertility at 12 to 16% (Oskay et al., 2010). Despite significant changes in the attitude toward sexual issues in recent years, fertility remains one of the most important issues in the minds of human beings to the extent that it is considered one of the most

crucial factors in consolidation of marital life. Various studies have demonstrated that the frequency of mental problems in infertile couples ranges from 25 to 65% and is significantly greater than the prevalence of such problems among the general population. Additionally, studies have shown that women, who are especially trained to accept the role of 'mother', are more strongly affected by infertility-related stress. Studies have also indicated that pressure on women to become pregnant increases after the first year of marriage and reaches its peak in the third and fourth years subsequent to marriage (Leiblum, 1993; Daniluk, 1988; Gynecologic, 1989; Wischmann, 2008; Noorbala et al., 2009; Noorbala et al., 2009; Braverman, 2004). Many infertile men and women feel like their masculinity or femininity is impaired as a result of

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their condition, leading to reduction in their quality of life. The stress inducing experience of female infertility is accompanied by extensive mental and physical effects influenced by such factors as cause and duration of infertility, previous history of unsuccessful pregnancy, and use of special treatment and research methods. Such consequences include reduced self-esteem and self-confidence, increased stress and anxiety, increased possibility of depression, development of inferiority complex, feelings of inadequacy and incompetence, sexual dysfunction, and marital problems (Wischmann, 2008; Ashkani *et al.*, 2006; Mazaheri and Mohsenian, 2012). Studies indicate that infertile women experience greater stress than infertile men and that they possess a lower level of mental health. Further, infertile women more commonly adopt less useful coping skills than men in a statistically significant manner (Pahlavani *et al.*, 2002). Depression and mental disorders are also observed more frequently among (Ashkani *et al.*, 2006; Noorbala *et al.*, 2007). High frequencies of sexual dysfunction have also been reported in numerous studies (Audu, 2002; Besharat and Hoseinzadeh Bazargani, 2006). Given that women are considered one of the main pillars of the family in every society and that maintaining and improving the health of women, especially mothers, are central concepts in socioeconomic development and welfare, there has recently been a surge of interest in the health of infertile women. Infertility experiences as well as utilization of assisted reproductive techniques – regardless of the outcome – may have long-term psychological effects or even affect a person for life. Hence, this study seeks to investigate the prevalence of sexual dysfunction in infertile women as well as the relationship between infertility, depression and anxiety in patients referred to the infertility clinic of Vali-e Asr Hospital from February 2014 to February 2015, in order to improve the health and quality of life of this group of patients through understanding of the factors that influence sexual dysfunction in infertile women and making preventive intervention and treatment possible.

MATERIALS AND METHODS

This cross-sectional study investigated 60 women suffering from primary and secondary infertility referring to the infertility clinic of Vali-e Asr Hospital from February 2014 to February 2015. Inclusion criteria for this infertility study involved absence of stress-causing factors such as divorce and first-degree family bereavement within the previous six months, absence of psychiatric disorders, and informed consent. Samples were gathered in a simple and sequential manner. Data-gathering forms and Persian language versions of the Female Sexual Function Index (FSFI) and the Depression Anxiety Stress Scales (DASS-21) were used to gather data. The structural validity of the questionnaire had been evaluated previously. The Persian version of the questionnaire was prepared by Mohammadi, and its validity was determined at 70% by Cronbach's alpha (Mohamadi *et al.*, 2008; Rosen *et al.*, 2000). The data-gathering form included demographic information (i.e. age, husband's age, place of residence, occupation, education, duration of marriage), type of infertility, duration of infertility, and underlying cause of infertility. The FSFI questionnaire was utilized to evaluate sexual dysfunction while the DASS-21 questionnaire was used

for evaluation of anxiety and depression. After explaining the purpose of the study, the ethical principles governing medical studies in general and obtaining informed consent from the patients, the data of patients satisfying the inclusion criteria were entered into the data-gathering forms as well as the FSFI and DASS-21 questionnaires. The FSFI includes 19 items involving female sexual function. This questionnaire was developed based on a female sample of normal controls and age-matched subjects fulfilling the DSM-IV diagnostic criteria for female sexual arousal disorder (FSAD). It examines six different domains of sexual function including desire, arousal, lubrication, orgasm, satisfaction, and pain. This questionnaire has been validated for clinical diagnosis of FSAD, female orgasmic disorder, and hypoactive sexual desire disorder. The DASS-21 questionnaire includes 21 items for measuring negative symptoms related to depression, anxiety, and stress. The depression scale covers statements that evaluate gloominess, lack of self-confidence, despondency, lack of interest in life, inability to become interested or involved, inability to experience enjoyment or satisfaction, and lack of energy. The anxiety scale involves extreme physiological arousal, fears and state anxiety. Finally, inability to relax, irritability, jumpiness, and restlessness are covered in the stress scale. The resulting data were then entered into SPSS version 20 and analyzed using appropriate statistical tests. Quantitative data reported in the forms of mean and standard deviation, and qualitative data were reported using frequency and relative frequency. Quantitative data distribution was examined using the one-sample Kolmogorov-Smirnov test. Where quantitative data distribution was not normal, the relationship between these variables and qualitative variables were examined using the independent-sample Mann-Whitney U test, and in the case of normal distributions, the relationship between the variable in question and the qualitative variables was examined using Student's t-test. The relationship between qualitative variables was examined using the chi-square test. P values of less than 0.05 were considered statistically significant.

RESULTS

Demographic profile and background information of the patients is shown in table 1.

Table 1. Demographic information of the sample

Age (mean ± SD)	29.69±5.47
Marriage duration (mean ± SD)	6.80±3.49
Duration of infertility (mean ± SD)	4.44±3.10
BMI (mean ± SD)	26.81±4.17
Obesity (BMI ≥ 30) n (%)	14 (28%)
Education, high-school diploma or above n (%)	34 (68%)
Employed n (%)	9 (18%)
Type of infertility	
Primary	33 (66%)
Secondary	17 (34%)
History of smoking n (%)	7 (14%)
History of pelvic surgery n (%)	17 (34%)

Based on the FSFI questionnaire, the prevalence of sexual dysfunction in infertile women (FSFI<26.55) was 52%. Data obtained using the DASS-21 questionnaire showed depression severity of 29 (58%) patients as normal (scores 0-9), 3 (6%) patients as mild (scores 10-13), 12 (24%) patients as moderate

(scores 14-20), 4 (8%) patients as severe (scores 21-27), and 2 (4%) patients as extremely severe (scores 28+). Anxiety severity based on DASS-21 data of 24 (48%) patients was normal (scores 0-7), 4 (8%) patients was mild (scores 8-9), 11 (22%) patients was moderate (scores 10-14), 4 (8%) patients was severe (scores 15-19), and 7 (14%) patients was extremely severe (scores 20+). Figure 13 displays the relative frequency of anxiety in the infertile women participating in the study. Furthermore, data gathered using the DASS-21 questionnaire revealed that stress severity of 27 (54%) patients was normal (scores 0-14), 9 (18%) patients was mild (scores 15-18), 7 (14%) patients was moderate (scores 19-25), 5 (10%) patients was severe (scores 26-33), and 2 (4%) patients was extremely severe (scores 34+). Figure 14 displays the relative frequency of stress in the infertile women participating in the study. The relationship between various degrees of depression, anxiety, and stress and other demographic variables (e.g. level of education, employment status) and clinical variables (e.g. obesity, smoking, infertility type, and history of abortion) was evaluated using the chi-square test, which demonstrated the lack of a significant relationship between degrees of stress, anxiety, and depression and demographic and clinical variables. The relationship between existence of sexual disorders and other demographic variables and clinical variables was also evaluated using the chi-square test, which again demonstrated the lack of a significant relationship between these variables. Considering the quantitative nature of the variables, linear regression analysis was utilized to discover the relationship between depression, anxiety and stress according to DASS-21 data and parameters of the FSFI. Even though the results did not indicate a statistically significant relationship between DASS-21 parameters and FSFI score, the relationship between depression and overall FSFI score was strongest. There was an inverse relationship between the two variables with a near significant p score of 0.058. This lack of significance may have been due insufficient sample size. Inversely, depression had the strongest relationship with satisfaction ($p=0.069$). Concerning the relationships between anxiety and FSFI parameters, the strongest was the inverse relationship with orgasm ($p=0.102$). In the relationships between stress and sexual functions, the strongest was the statistically significant inverse relationship between stress and the satisfaction parameter ($p=0.016$).

DISCUSSION

In the present study, 42% of the patients were diagnosed with varying degrees of depression, 52% with anxiety, 46% with stress, and 52% with sexual dysfunction. These results coincide with results from similar studies. In Noorbala et al., frequency of psychological disorders was reported as 44% (Noorbala et al., 2009). Tayebi and Ardakani demonstrated the prevalence of sexual and orgasmic disorders in infertile women as over 70% (Tayebi and Ardakani, 2009). In the Ashkani et al. study, a depression rate in infertile individuals (both men and women) of 53.3% was reported (Ashkani et al., 2006). This study did not show a significant relationship between degrees of stress and employment status. In Noorbala et al. in 2009, a significant relationship was reported between the employment of infertile women outside the home and lower environmental stress (Noorbala et al., 2009). Nelson et al. reported women's

employment as an effective factor in the stress and depression of infertile women (Nelson et al., 2008). Investigating the relationships between DASS-21 and FSFI parameters, depression and stress had the strongest correlation with satisfaction, and anxiety had the strongest correlation with orgasm. In addition, the strongest correlation pertained to anxiety and sexual function in the patients under study. Only the inverse relationship between stress and satisfaction was statistically significant. Hashemi et al. determined that the highest rate of sexual dysfunction in patients with polycystic ovarian syndrome (PCO) compared with the control group was related to arousal and lubrication (Hashemi et al., 2014). In the study of Keskin et al., a significant relationship was reported between infertility type (primary and secondary) and sexual dysfunction in infertile women (Keskin et al., 2011). Besharat et al. found that the frequency of psychological problems, sexual problems, and the feeling of helplessness in infertile women was significantly greater compared to fertile women (Besharat, 2006) such that Alirezaei et al. deemed programs for enhancing sexual performance and sexual self-efficacy to be necessary (Alirezaei et al., 2014). Noorbala et al. demonstrated a significant relationship between abortion frequency and increase of stress and depression which differs with the results of the present study (Noorbala et al., 2007). In the present study, no significant relationship existed between sexual dysfunction in infertile women and demographic variables. Compared with fertile women, infertile women experience greater sexual dysfunction especially in the satisfaction parameter. Women suffering from PCO have higher rates of sexual dysfunction than the general population since infertility exerts considerable personal and social impacts that may be related to diverse cultural, social, religious, and racial factors. Overall, the findings of the present study demonstrate that the frequency of sexual dysfunction, depression, anxiety, and stress in infertile women is high, which coincides with the results of similar studies. The present study also had some limitations. First, a control group was not determined for comparison. Therefore, the study findings cannot be generalized to the entire population. Second, the sample size of the study was low which may justify some relationships that lacked significance. Therefore, examination of these factors with greater sample sizes and comparison with a control group may help clarify these relationships.

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